



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 768 BYPASS RATIO: 5.2  
 UNIQUE ID NUMBER: 14RR070 PRESSURE RATIO ( $\pi_{00}$ ): 34.5  
 COMBUSTOR: Phase5  
 ENGINE TYPE: MTF RATED THRUST ( $F_{00}$ ) (kN): 304.2

REGULATORY DATA **\*\* DATA SUPERSEDED \*\*** SEE FOLLOWING UID FOR REVISED DATA: **01P14RR101**

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	5.0	40.6	53.7	2.1
AS % OF ORIGINAL LIMIT	25.5	34.4	49.3	12.0
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			61.6	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			70.7	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			79.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			90.8	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	2.907	0.00	0.35	32.01	1.5
CLIMB OUT	85	2.2	2.375	0.01	0.49	24.90	1.8
APPROACH	30	4.0	0.781	0.04	1.71	10.12	0.5
IDLE	7	26.0	0.259	3.19	26.94	4.46	0.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1027	1303	11411	15414	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				9	9	9	9
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				4.3	37.5	50.7	1.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				1.0	6.5	2.2	0.7
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				3.12-4.93	30.3-42.94	49.18-53.18	1.2-2.5

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	95.1-101.3
TEMPERATURE (K)	279.8-293.2
ABS HUMIDITY (kg/kg)	0.00473-0.00886

### FUEL

SPEC	
H/C	1.91
AROM (%)	17.7

MANUFACTURER: Rolls-Royce plc  
 TEST ORGANIZATION: Rolls-Royce plc  
 TEST LOCATION: Derby  
 TEST DATES: 16/03/1995-02/06/2014

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from Certification Report DNS196860
2. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
- 3.

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)